

REFERENCE 10

MEMORANDUM

DATE: June 1, 2015

TO: Division File

FROM: Lance L. Range, Environmental Protection Specialist, Illinois EPA *LLR*

SUBJECT: Documentation of the Surface Water Pathway Target Distance Limit for the Old American Zinc site

SITE NUMBER: 1630505007
Fairmont City, Illinois
Old American Zinc Plant
Superfund/HRS

Documentation of the Surface Water Pathway Target Distance Limit

The 15-mile target distance limit for the CERCLA pathway was documented using a desktop Geographic Information System (GIS), and a number of functions within the ARCMAP 10.2 program. ARCGIS editor tools were initially used to trace the surface water route, and measurement tools contained within the ARCMAP 10.2 program was used to measure the 15 mile Target Distance Limit. This pathway was initially identified in pages 3-6 through 3-10 of the 2009 Remedial Investigation Report. A world imagery map (ESRI, 2014) and a topographic map (National Geographic 1994) were used for reference when determining water flow direction. When utilizing all of these informational sources, it was determined that from the point where West Ditch 1 enters the Old Cahokia Creek wetland (the probable point of entry to the surface water pathway) water flows in a westerly direction through a number of small waterways for approximately 8.5 miles before entering the Mississippi River, at a point immediately west of the City of East St. Louis. From that point, the Mississippi River flows in a southerly direction for an additional 6.5 miles to the end of the target distance limit. The 15 mile Target Distance Limit terminates at a point in the Mississippi River southwest of the Village of Cahokia Illinois. The 15-mile target distance limit map can be seen to the right.

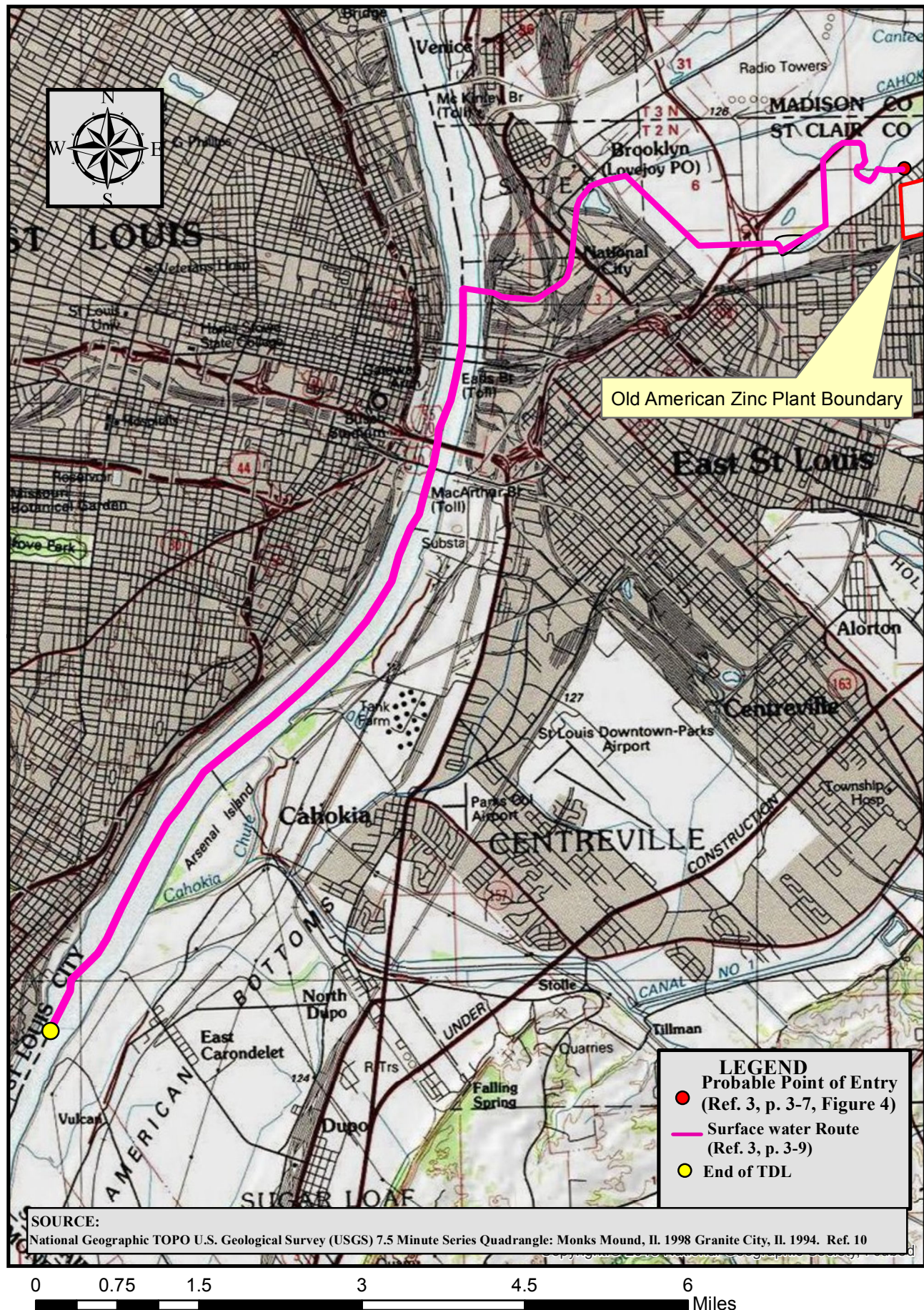
References

National Geographic, 1994. TOPO U.S. Geological Survey (USGS) 7.5 Minute Series Quadrangle: Monks Mound, IL. 1998 Granite City, IL. 1994.

ESRI, 2014. ArcGIS Map Service: World Imagery, Online Map Images. Electronic data maintained by ESRI including imagery from DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community. High Resolution Imagery provided by DigitalGlobe. At <http://www.arcgis.com/home/item.html?id=10df2279f9684e4a9f6a7f08febac2a9>. Accessed on March 19, 2014.

Figure 4

Surface Water Migration Route - 15 Mile Target Distance Limit



Ref. 10 contains the process for calculating the 15 Mile TDL